

Module 1: Cloud Concepts

Multiple choice questions

1. Which of the terms in the following list can be considered benefits of using cloud services? *Select all that apply.*

- a. Elasticity (correct answer)**
- b. Unpredictable costs
- c. Agility (correct answer)**
- d. Economies of scale (correct answer)**

2. Which of the following terms relates to making a service available with no downtime for an extended period? *Select the correct option.*

- a. Performance
- b. Fault tolerance
- c. High availability (correct answer)**
- d. Agility

3. Which of the following sentences best describes platform as a service (PaaS)? *Select the correct option.*

- a. Users can create and deploy an application as quickly as possible without having to worry about managing the underlying infrastructure. (correct answer)**
- b. Users are responsible for purchasing, installing, configuring, and managing their own operating systems, middleware, and applications.
- c. Users pay for an annual or monthly subscription.
- d. Users are only responsible for updating the operating system.

4. Which of the following requires the most user management of cloud services? *Select the correct option.*

- a. Infrastructure as a service (correct answer)**
- b. Platform as a service
- c. Software as a service
- d. All require approximately the same level of user management.

5. Which cloud model provides the most flexibility? *Select the correct option.*

- a. Public
- b. Private
- c. Hybrid (correct answer)**
- d. All provide the same level of flexibility.

Open-ended questions

1. A client wants to deploy their web application and associated data to the cloud with minimal configuration. Which cloud service type is suitable for this and why?

Answer: (Should include the PaaS cloud service type as being suitable as it provides minimal configuration for deploying and publishing code)

2. What important cloud attribute allows businesses and organizations to quickly grow their virtual machine infrastructure as their workloads increase, and how is it achieved?

Answer: (Should include a statement on scalability and how it can be achieved through the use of virtual machine scale sets)

3. What are the main differences between public and private clouds?

Answer: (Should include a statement indicating a private cloud enables the owner to have full control over everything including hardware, while a public cloud is owned by the cloud vendor)

4. A developer wants to deploy their application code to the cloud and needs access to the operating system to install custom software. Which is the best cloud service type to use in this case and why?

Answer: (Should include a statement that indicates IaaS is the most suitable as it provides access to an underlying operating system to install custom software)

5. What are the main differences between OpEx and CapEx? Give an example of each.

Answer: (Should include a statement that says OpEx has no up-front costs and can scale to meet unpredictable demand. A simple OpEx example could be a web service running on PaaS instead of on-premises server hardware. Additionally, CapEx should be briefly defined as an up-front cost an organization may invoke to purchase physical assets such on-premise server hardware. An example of which could be a large Storage Area Network (SAN))

Module 2: Azure Architecture and Services

Multiple choice questions

1. What Microsoft Azure object contains multiple datacenters that are connected by a low-latency network? *Select the correct option.*

- a. A geography
- b. A region (correct answer)**
- c. An availability set
- d. A pair

2. Availability sets are made up of which of the following? *Select all that apply.*

- a. Update domains (correct answer)**
- b. Region pairs
- c. Fault domains (correct answer)**
- d. A geography

3. Which of the following statements about virtual machines (VMs) and containers is true? *Select all that apply.*

- a. All VMs share the same operating system instance.
- b. VMs are isolated from the host hardware, while containers are not.
- c. All containers share the same operating system instance. (correct answer)**
- d. VMs and containers are isolated from the host hardware. (correct answer)**

4. Availability Zones allow customers to run mission-critical applications with what benefits? *Select all that apply.*

- a. High availability (correct answer)**
- b. Low-latency replication (correct answer)**
- c. Offsite backup
- d. Live migration

5. What strategy employs a series of mechanisms to slow the advance of an attack aimed at acquiring unauthorized access to data? *Select the correct option.*

- a. Ciphertext
- b. Blob security
- c. Network security layers
- d. Defense-in-depth (correct answer)**

6. Which layer of Defense-in-depth is focused on preventing network-based attacks? *Select the correct option.*

- a. Data layer
- b. Identity and Access layer
- c. Perimeter layer (correct answer)**
- d. Compute layer

Open-ended questions

1. What can a company do to help ensure data redundancy when using Azure Blob storage?

Answer: (Should include a statement that describes Locally Redundant Storage (LRS) and Zone Redundant Storage options and the pros/cons of each)

2. Describe what a resource group is on Azure and give an example of best practice when using a resource group.

Answer: (Should include a statement that describes a resource group as a container of related resources for an Azure solution. It is best practice to add resources to the group that share the same lifecycle, such as a web application with data storage)

3. Describe what an availability zone is on Azure and what availability zones are used for.

Answer: (Should include a statement that describes an availability zone as a service that protects applications from datacenter failures. An example could be to ensure 99.99% SLA uptime of a web service if it deployed as part of an availability zone)

4. What is the main benefit to a developer when using Azure Functions?

Answer: (Should include a statement that says Azure Functions allow developers to run small pieces of code without worrying about any of the underlying application infrastructure – they are very quick to deploy and publish)

5. In the context of the network layer in defense-in-depth, name and describe two actions that will help secure cloud resources.

Enter your answer in the following space.

Answer: (Should include a statement that mentions two or more of the following: limit communication between resources, deny access by default, restrict inbound internet traffic, and implement secure connectivity to on-premise networks. Essentially the focus at this layer is limiting networking connectivity across cloud resources to reduce the risk of an attack spreading through the network)

6. In what scenario would the Azure Blob immutable storage feature be useful? *Enter your answer in the following space.*

Answer: (Should include a statement that mentions sectors such as Healthcare or Finance where data modification is strictly regulated)

Module 3: Management and Governance

1. What defines the set of controls that are recommended for resources within a specified subscription or resource group?

Select the correct option.

- a. Symmetric policy
- b. Secure score
- c. Azure Policy (correct answer)**
- d. Asymmetric policy

2. If you want to prevent accidental deletion of an Azure resource, which of the following options should you use? *Select the correct option.*

- a. MFA
- b. Azure Tags
- c. Azure Resource Locks (correct answer)**
- d. Azure Policy

3. Which feature of Azure would you use to help logically organize resources into a taxonomy? *Select the correct option.*

- a. Azure Resource Locks
- b. Azure Advisor
- c. Azure Policy
- d. Azure Tags (correct answer)**

4. What Azure service would you use if you needed to define a repeatable set of Azure resources to deploy that also adheres to an organization's compliance requirements? *Select the correct option.*

- a. Azure Policy
- b. Azure Blueprints (correct answer)**
- c. ARM Templates
- d. Azure Tags

4. The Azure Pricing Calculator provides: *Select the correct option.*

- a. A bill for the selected configurations of products and services used in the past month.
- b. A means to save money by committing to selected configurations of products and services over one or three years.
- c. An estimate of the costs associated with selected configurations of products and services. (correct answer)**
- d. A tool to compare on-premise costs to Azure products and services.

Open-ended questions

1. A company wants to implement geographic compliance requirements to limit locations where services can be deployed. How might this be done? *Enter your answer in the following space.*

Answer: (Should include a statement that mentions implementing Azure Policy and creating a policy definition based on Allowed Locations. The policy enables the company to restrict the available locations when deploying resources. Its effect is used to enforce geographic compliance requirements)

2. An employee working in the human resources department of a company is assigned a role via the Azure role-based access control (RBAC). This enables them to read and write to employee records. Considering the company has many other departments, should employees in all departments have the same RBAC role assigned as the human resource employees, or can it be done another way? *Enter your answer in the following space.*

Answer: (Should include a statement that mentions employees should be assigned different roles via RBAC dependent upon the department they are in and their overall responsibilities. For example, some employees may only require read permissions,

while others require write permissions. This can be managed through RBAC at a granular level)

3. A business wants to enhance the security of the customer sign-in process for its website so that it asks for additional forms of identification. What type of Azure service could they use for this? Additionally, give examples of the types of additional identification information that could be used. *Enter your answer in the following space.*

Answer: (Should include a statement that mentions Azure MFA (multi-factor authentication). The additional identification falls into three categories: something you know (security question), something you possess (mobile phone for token generation), and something you are - biometrics such as fingerprint)

5. A business offers several separate services for music, video, and eBook content with each service requiring separate sign-in credentials. To make the customer experience more seamless they want to use a service that allows customers to use one set of sign-in credentials for all separate services. Currently the business uses Azure Active Directory (AAD). What service do they need to add to enable the new sign-in approach? *Enter your answer in the following space.*

Answer: (Should include a statement that mentions as they are already using AAD, they can simply enable the single sign-on (SSO) service which is part of AAD. This will enable customers to use just one username and password for all services which greatly simplifies account management)

5. What are some strategies a company could use to minimize their costs when using Virtual Machines?

Answer: (Should include a statement that mentions deallocating resources Virtual Machines when not in use. For non-critical workloads on Virtual Machines, Azure Spot Instances can save money)

6. Using the Azure Pricing Calculator, price a virtual machine in different locations around the world and compare the costs. What do you notice? What factors may have influenced the prices that you see? And what factors other than cost should you consider when choosing a location for your virtual machine?

Answer: (Should include a statement that says the cost of running Azure datacenters may vary around the globe due to factors such as energy costs and local taxes. Multiple factors other than cost need to be considered if deploying a service in a location that is less expensive. For example, is it far from the customers and increases latency? Additionally, would deploying to the location breach compliance or government regulations around data privacy?)